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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard Forbes et al.

Title: THREE-DIMENSIONAL PHOTONIC CRYSTAL WAVEGUIDE STRUCTURE AND METHOD

Docket No.: 1303.034US1
Filed: January 17, 2002
Examiner: Unknown
Customer No.: 21186



Serial No.: 10/052,952
Due Date: N/A
Group Art Unit: 2874
Confirmation No.: 3317

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

- ☒ A return postcard.
- ☒ An Information Disclosure Statement (2 pgs.), Form 1449 (3 pgs.), and copies of 45 cited documents.

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
Customer Number 21186

By: M L B
Atty: Marvin L. Beekman
Reg. No. 38,377

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MEREDITH MESCHER
Name

Meredith Mescher
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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. Customer Number 21186
(GENERAL)

S/N 10/052952



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Leonard Forbes et al.	Examiner:	Unknown
Serial No.:	10/052,952	Group Art Unit:	2874
Filed:	January 17, 2002	Docket:	1303.034US1
Title:	THREE-DIMENSIONAL PHOTONIC CRYSTAL WAVEGUIDE STRUCTURE AND METHOD		

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

INFORMATION DISCLOSURE STATEMENT

Serial No :10/052952

Filing Date: January 17, 2002

Title: THREE-DIMENSIONAL PHOTONIC CRYSTAL WAVEGUIDE STRUCTURE AND METHOD

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The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

LEONARD FORBES ET AL.

By their Representatives,

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By Marvin L. Beekman
Marvin L. Beekman
Reg. No. 38,377

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MEREDITH MESCHER
Name

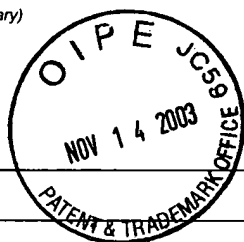
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Complete if Known

Application Number	10/052,952
Filing Date	January 17, 2002
First Named Inventor	Forbes, Leonard
Group Art Unit	2874
Examiner Name	Unknown

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Attorney Docket No: 1303.034US1

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	US-2002/0062782	05/30/2002	Norris, D. J., et al.	117	3	09/06/2001
	US-2002/0175330	11/28/2002	Geusic, J. E., et al.	257	74	05/22/2001
	US-5,471,180	11/28/1995	Brommer, K., et al.	333	202	12/06/1993
	US-5,526,449	06/11/1996	Meade, R., et al.	385	14	07/14/1994
	US-5,739,796	04/14/1998	Jasper, L. J., et al.	343	895	10/30/1995
	US-5,999,308	12/07/1999	Nelson, K. A., et al.	359	321	04/01/1998
	US-6,075,640	06/13/2000	Nelson, K. A.	359	239	11/25/1998
	US-6,139,626	10/31/2000	Norris, D. J., et al.	117	68	09/04/1998
	US-6,425,713	09/17/2002	White, C. A.	359	322	12/29/2000
	US-6,436,187	08/20/2002	Patel, S., et al.	117	68	09/01/1999

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
	EP-1030196	08/23/2000	Van Nest Braun, P., et al.	G02 B	5/20	
	EP-1085352	03/21/2001	Hiraoka, T., et al.	G02 B	6/12	
	JP-2001-093887	04/06/2001	Yukihiro, U.	H01L	21/306 5	
	WO-98/35248	08/13/1998	Fink, Y., et al.	G02 B	6/138	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		BIRNER, A., et al., "Macroporous silicon: a two-dimensional photonic bandgap material suitable for the near-infrared spectral range", <u>Physica Status Solidi A</u> ; 65(1), (January 16, 1998),111-117	
		BIRNER, A., et al., "Silicon-Based Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),377-388	
		BLANCO, A., et al., "Large-scale synthesis of a silicon photonic crystal with a complete three-dimensional bandgap near 1.5 micrometres", <u>Nature</u> , 405(6785), (May 25, 2000),437-40	
		BLANFORD, C F., et al., "Gems of Chemistry and Physics: Macroporous Metal Oxides with 3D Order", <u>Advanced Materials</u> , 13(6), (March 2001),	
		EDRINGTON, A C., et al., "Polymer-Based Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),421-425	

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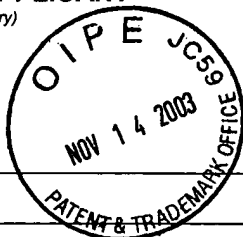
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First Named Inventor Forbes, Leonard

Gr up Art Unit 2874

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Sheet 2 of 3

Attorney Docket No: 1303.034US1

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		HO, K, et al., "Existence of a photonic gap in periodic dielectric structures", <u>Physical Review Letters</u> , 65(25), (December 17, 1990),3152-3155	
		HOLLAND, BRIAN T., et al., "Synthesis of Macroporous Mineral with Highly Ordered Three-Dimensional Arrays of Spheroidal Voids", <u>Science</u> , 281, (July 24, 1998),538-540	
		JIANG, P, et al., "The Fabrication and Bandgap Engineering of Photonic Multilayers", <u>Advanced Materials</u> , 13(6), (March 2001),389-393	
		JOANNOPOULOS, J D., et al., "Photonic crystals : molding the flow of light", Princeton, N.J. : Princeton University Press, (1995),6	
		JOHN, S, et al., "Photonic bandgap formation and tunability in certain self-organizing systems", <u>Journal of Lightwave Technology</u> , 17(11), (November 1999),1931-1943	
		JOHNSON, S G., et al., "Guided modes in photonic crystal slabs", <u>Physical Review B (Condensed Matter)</u> , 60(8), (August 15, 1999),5751-8	
		LI, Z Y., et al., "Photonic Bandgaps in Disordered Inverse-Opal Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),433-436	
		LIN, SHAWN YU, et al., "A three-dimensional optical photonic crystal", <u>Journal of Lightwave Technology</u> , 17(11), (November 1999),1944-1947	
		LONCAR, M, et al., "Waveguiding in planar photonic crystals", <u>Applied Physics Letters</u> , 77(13), (September 25, 2000),1937-1939	
		LU, Y, et al., "Three-Dimensional Photonic Crystals with Non-spherical Colloids as Building Blocks", <u>Advanced Materials</u> , 13(6), (March 2001),415-420	
		MANOHARAN, V N., "Photonic Crystals from Emulsion Templates", <u>Advanced Materials</u> , 13(6), (March 2001),447-450	
		MIGUEZ, H, et al., "Synthesis and Photonic Bandgap Characterization of Polymer Inverse Opals", <u>Advanced Materials</u> , 13(6), (March 2001),393-396	
		MITAKE, K, et al., "Theoretical Study on the Formation Process of Empty Space in Silicon (ESS)", <u>2000 International Conference on Solid State Devices and Materials</u> , (2000),198-199	
		MIZUSHIMA, I., et al., "Empty-space-in-silicon technique for fabricating a silicon-on-nothing structure", <u>Applied Physics Letters</u> , 77(20), American Institute of Physics, NY,(November 13, 2000),3290-3292	
		NI, P, et al., "Synthetic SiO2 Opals", <u>Advanced Materials</u> , 13(6), (March 2001),437-441	
		NICHOLS, F A., "Surface-(interface) and volume-diffusion contributions to morphological changes driven by capillarity", <u>Transactions of the American Institute of Mining, Metallurgical and Petroleum Engineers</u> , 233(10), (1965),1840-8	
		NORRIS, D J., et al., "Chemical Approaches to Three-Dimensional Semiconductor Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),371-376	

EXAMINER**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

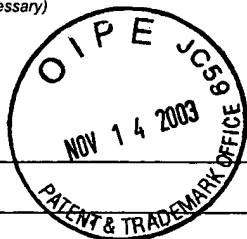
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		SATO, T , "A new substrate engineering for the formation of empty space in silicon (ESS) induced by silicon surface migration", <u>International Electron Devices Meeting 1999. Technical Digest</u> , (1999),517-20	
		SMITH, C J., et al., "Low-loss channel waveguides with two-dimensional photonic crystal boundaries", <u>Applied Physics Letters</u> , 77(18), (October 30, 2000),2813-2815	
		SUBRAMANIA, G , et al., <u>Advanced Materials</u> , 13(6), Inverse Face-Centered Cubic Thin Film Photonic Crystals,(March 2001),443-446	
		TESSIER, P M., et al., "Structured Metallic Films for Optical and Spectroscopic Applications via Colloidal Crystal Templating", <u>Advanced Materials</u> , 13(6), (March 2001),396-400	
		XIA, Y , "Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),369	
		XIA, Y , et al., "Self-Assembly Approaches to Three-Dimensional Photonic Crystals", <u>Advanced Materials</u> , 13(6), (March 2001),409-413	
		YABLONOVITCH, E , "Inhibited spontaneous emission in solid-state physics and electronics", <u>Physical Review Letters</u> , 58(20), (May 18, 1987),2059-62	
		YABLONOVITCH, E , et al., "Photonic band structure: the face-centered-cubic case employing nonspherical atoms", <u>Physical Review Letters</u> , 67(17), (October 21, 1991),2295-8	
		YANG, P , et al., "Patterning Porous Oxides within Microchannel Networks", <u>Advanced Materials</u> , 13(6), (March 2001),427-431	

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